

superne paululum infra suturam sulco angusto leviter constricti, infra sulcum costis subrotundatis (in anfr. ultimo flexuosis inferne desinentibus circiter 14) instructi, striis spiralibus remotis paucis (in anfr. ult. ad 12) insculpti; anfr. ultimus subventricosus, testæ $\frac{5}{8}$ æquans; apertura intus fuscescens, basi oblique lateque canaliculata, longitudinis totius $\frac{4}{9}$ æquans; labrum tenue, superne ad sulcum leviter sinuatum; columella medio arcuata, basi obliqua. Long. 26 mill., diam. 10.

Hab. South Africa.

This shell, although without a locality attached, in all probability inhabits the Cape of Good Hope, having with some species from there such a general resemblance as to warrant the supposition; the brown band occupies about half the whorls, not quite reaching the upper ends of the ribs.

Pleurotoma (Clionella) platystoma.

Testa elongata, turrita, flavescens (interdum pallide roseo-fusca), superne juxta suturam et mediane inter nodulos dilute fusco notata; anfract. 7, primi 2 convexi, papillares, læves, cæteri superne ad suturam margine incrassato leviter nodoso, deinde concavi, medio angulati, infra angulum plani, circa medium nodulorum parvorum obliquorum (ad 13) serie unica ornati, spiraliter striati, striis subdistantibus 10–12, in anfr. ultimo circiter 24, incrementi lineis obliquis striati; apertura lata, subquadrata, longitudinis testæ totius fere $\frac{5}{13}$ æquans; sinus latus, mediocriter profundus; columella callo tenui induta; canalis apertus, brevissimus.

Long. 13 mill., diam. 5.

Hab. Cape of Good Hope.

The two apical whorls are remarkably large. The faint nodules at the top of the whorls and the more distinct ones around the middle have faint dots of brown between them; and the spiral striæ are interrupted by them.

L.—On *Rupertia stabilis*, a new *Sessile Foraminifer* from the North Atlantic. By G. C. WALLICH, M.D., Surgeon-Major Retired List, H.M. Indian Army.

[Plate XX.]

It will, I think, be conceded that a special degree of interest attaches to the Foraminifer about to be described, when I state that it not only represents a well-marked new genus, but is one of the very few forms as yet discovered whose peculiarities of structure point to their being sessile inhabitants of the bed of the ocean.

The specimens were obtained by me in 1860, in three soundings taken on board H.M.S. 'Bulldog,' on opposite sides of the southern extremity of Greenland—the depth in the three localities varying from 108 fathoms on the east coast, to 1205 fathoms on the west. In each locality the number of specimens was considerable, and the condition of the shells such as to indicate their perfect freshness at the time they were brought up from the bottom. Partly owing, however, to the impossibility of carrying on microscopic work during such tempestuous weather as prevailed whilst the 'Bulldog' cruised in those latitudes, and partly to my having been deceived by the resemblance observable in the outline of the neck and margin of the disk of the new form to a monstrously developed species of *Uvigerina*, it did not receive the attention it deserved, but remained stored away in my collection until 1874, when, on re-examining my North-Atlantic materials, I at once perceived that it was both specifically and generically new.

Nevertheless, fully recognizing in the daily increasing distaste for the undue multiplication of types one of the most salutary results of modern biological teaching, and feeling disinclined to rely too far on my own opinion, I made up my mind to defer sending forth any observations on the subject until that opinion should be confirmed and strengthened by some thoroughly experienced and trustworthy authority on the Foraminifera. Under these circumstances I submitted my specimens, figures, and brief memoranda, to my able and obliging friends Professors Rupert Jones and Parker. Their report, which reached me a few days ago together with my embodied memoranda, I now, with their permission, publish.

I have named the new form after Prof. Rupert Jones, *Rupertia stabilis*, in recognition of the obligation he has laid me under, not only on this but on former occasions when I have sought his counsel on questions relating to the Foraminifera.

Rupertia stabilis, Wall. (See Pl. XX.)

“A chambered hyaline Foraminifer of the Rotaline group, subpyriform, with an irregular lumpy outline, like some of the asymmetrical Puffballs, and somewhat resembling an inverted *Ascidia mamillata*. The shell is fixed by a relatively large basal disk, and raised on a thick cylindrical neck or pedestal, usually straight, but sometimes slightly curved, from which several spacious chambers swell upwards and outwards, with an imperfect spiral arrangement, resulting in the often top-heavy, lopsided, and asymmetrical outline of the full-grown shell. Young individuals are simply subglobular and pedunculated.” (The disk, from the earliest stage of the shell,

attains its full dimensions, the neck being of nearly the same diameter as the disk, whilst the upper part is merely rounded off, as shown in figs. 5 and 6 of the accompanying Plate.—G. C. W.)

“The shell-wall is essentially vitreous and rather coarsely tubular; but the tubules become obsolete over and near the sutures, leaving tubuliferous tracts with glassy interspaces. In places the shell grows opaque and sometimes becomes covered with particles of mineral matter or minute Foraminifera and broken sponge-spicules.”

(Here, then, as in a very large number of the deep-sea Foraminifera, we have the arenaceous structure supplementing, and in some cases entirely superseding, the normally calcareous shell of the species.)

The older chamber-walls generally appear to be formed of two or even three layers secreted one over the other. Sometimes the inner layer is opaque and closely resembles opal glass, the tubules distinctly opening out into the interior. The vitreous layer occurs externally to this. In the last-formed and largest chamber the vitreous is the only layer, the tubules then looking like minute white stars with a central pore in each. *The disk is quite imperforate.*—G. C. W.)

“Each chamber has a large, transverse, lunular slit in front, this simple aperture being arcuate and forked at one end, as shown in fig. 11. The chambers are superposed, with little or no overlapping for the most part. A secondary coating of shell-wall is here and there seen creeping down the neck towards the glassy base. The basal disk has usually some obscure, minute, opaque lobules about its centre; but the greater portion of its area is glassy and apparently structureless, the substance presenting the sugar-candy-like aspect so often observable on the bases of the fixed Foraminifera. Even when only one large chamber is present the disk seems to have been already formed; and it does not subsequently increase in area.

“In its relation to other Foraminifera, this fungus-shaped form stands between *Planorbulina* and *Globigerina*, and, as to its shell-structure, like *Carpenteria*. In its semi-opaque condition it imitates the habit of *Pulvinulina*, which sometimes becomes imperforate over broad tracts, and coated with a glassy layer perforated by large pores here and there.

“Instead, however, of spreading out sessile chambers in a compound tent-like arrangement, like *Carpenteria*, this sub-cylindrical lobulated Foraminifer raises its chambers high up, with somewhat of a Bulimine twist, on a broad-based peduncle.”

The associated Foraminifera (as determined by Professors Rupert Jones and Parker) are :—

<i>Biloculina ringens</i> (thick).	<i>Pulvinulina auricula</i> (large).
<i>Lituola scorpiurus</i> (nodosarine).	<i>Discorbina globularis</i> .
<i>Textularia sagittula</i> .	<i>Nonionina scapha</i> (large).
— <i>agglutinans</i> .	— <i>striatopunctata</i> (large).
<i>Cristellaria rotulata</i> (large).	<i>Polystomella crispa</i> (large).
— <i>ariminensis</i> (large).	(<i>Entosolenia marginata</i> , var.,
— <i>coronata</i> (large).	G. C. W.)

Professor Rupert Jones also informs me that he “cannot help thinking the obscure lobulate spots in the centre of some of the disks may be a very small primordial spire of the very earliest-formed chambers, this being possible, probable, and quite in accordance with Planorbiline characteristics.” I have completely failed to detect any thing like such an approach to a spiral or minute chamber-like arrangement in two carefully dissected specimens which appeared most likely to exhibit it, had it really been present. It is, however, quite possible, as Prof. Jones says, that this structure may be disclosed when a sufficiently large number of disks is examined.

Height of the mature shell from $\frac{1}{4}$ to $\frac{1}{8}$ of an inch.
Diameter of disk about $\frac{1}{50}$ of an inch.

EXPLANATION OF PLATE XX.

- Fig. 1.* Erect view of a mature shell of *Rupertia stabilis*, showing the disk in profile and the slit-like aperture of the last-formed chamber.
- Fig. 2.* Oblique view of a specimen of the same, in which the neck is bent and the face of the disk presents itself.
- Fig. 3.* The most erect form in which this Foraminifer occurs, the aperture being on the opposite side to that depicted.
- Fig. 4.* Another specimen, showing the irregular growth sometimes met with.
- Figs. 5 & 6.* Young specimens, showing the contour of the primordial chamber.
- Fig. 7.* View from upper surface of the young specimen depicted in *fig. 5*, showing the position of the aperture.
- Fig. 8.* Disk of the same.
- Figs. 9 & 10.* Two views of a specimen in which two masses of mineral are firmly imbedded in the shell-substance.
- Fig. 11.* View from above of the last-formed chamber of an adult specimen, in which the arcuate and forked aperture was observed.
- Fig. 12.* A specimen in which the entire surface was thickly covered with extremely minute Globigerine and other foraminiferal shells and fragments of sponge-spicules.
- Fig. 13.* A perfectly “arenaceous” but broken specimen. No other specimen of this kind was discoverable in the material.